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(54) **Improvements in or relating to video-photo installations**

(57) A video-photo installation for producing a photographic montage using a real time image of a subject-user of the installation and a stored image selected by the subject-user, includes a sensor for sensing the position of the subject-user and for adjusting that position, and control means to enable the installation to be controlled by the subject-user in accordance with instructions provided by the installation. The control means may be by touch screen and communications with the user may be by audio/viual means and may have multilingual capacity. Means may be provided for adding cosmetic features to the image or messages. The stored images may replaced by reloading of a diskette.

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IMPROVEMENTS IN OR RELATING TO VIDEO-PHOTO INSTALLATIONS

This invention concerns improvements in or relating to video-photo installations and in particular is directed to the enhancement of their user-friendliness.

It is known principally from European Patent Application No 0 326
5 515 to employ a video-photo installation wherein the subject user is
able to select a computer-stored background for a photographic
montage and to superimpose a real time image thereon in the
representational format which meets the user's requirements. In
particular, the known installations of this kind enable a subject to
10 personalise for example greetings cards by combining a real time
image of the subject either as background or foreground with a
personally selected message or illustration drawn from the computer
memory.

One of the difficulties which detracts from the ease and simplicity
15 of using installations of this type is the requirement within a
relatively short time span to make decisions regarding the
composition of the end product, namely the montage, and specifically
when a personal real time image of the subject user is to be
utilised, to ensure that the correct pose is obtained. The
20 conventional installations generally confront the user with an array
of controls which although not technically difficult to operate,
present at least the possibility of yielding a poor result in the
event of inadvertent misuse, for example by giving the installation
an instruction prematurely whereby an unposed, and therefore an
25 unwanted, image is captured.

Furthermore, current installations of the kind described afford the
user the opportunity to create a double image or double plane
montage only with the real time image being the foreground or the
background.

In view of the variety in the size of subject users, it is important to facilitate the manner in which the individual poses in front of the camera and in current installations manual means are provided for example to adjust the seat height to enable correct
5 positioning. However, this activity is both time consuming and laborious and in any event does not ensure that the subject is correctly positioned.

In this day and age with most major cities in any country being of a cosmopolitan character, either permanently or seasonally, it is
10 desirable to provide installations which are user-friendly to all on a multi-lingual basis.

It is in the nature of the potential user that novelty wears thin in the absence of change and accordingly it is advantageous to provide an integral capability in such video-photo installations whereby the
15 choice of computer stored images can be changed. However, currently existing installations require extensive and thus expensive reprogramming remotely from their site, and the necessity for removal is unwelcome commercially because of the consequential financial loss from downtime.

20 It is an object of the present invention to provide a video-photo installation which gives to the subject user a more user-friendly facility than with conventional installations in terms of comprehensibility and ease of use, and to give a greater degree of automaticity.

25 It is a further object of the present invention to provide a video-photo installation which facilitates maintenance.

Accordingly the invention provides a video-photo installation including a video camera for receiving a real-time image of a subject-user, sensing means for sensing the position of the
30 subject-user and for adjusting the position of the subject-user and/or the camera to obtain a correct sight of the subject-user image, a

computer including a memory having a plurality of stored images, control means enabling the subject user to control the installation, a visual display monitor for visually representing a montage of the image of the subject-user and one or more stored images, the control
5 means being adapted for actuation by the subject-user to select one or more of the stored images for display on the monitor and to effect operation of the camera to focus upon the subject user to obtain a real-time image, the control means being further adapted upon command of the subject-user to freeze a particular real-time
10 image, means for instructing the subject-user as to the manner and sequence in which the control means are actuatable, means for informing the user as to when the montage is to be captured, means for recording and printing the captured montage, the control means being actuatable to effect printing of the captured montage.

15 Conveniently the video photo installation is housed within a booth which incorporates a seat, or other support, for the subject-user, the seat or other support being movable to position the subject-user accurately for the camera. In the alternative or in addition, the camera is adapted for movement into a position whereat the
20 subject-user comes within its field of vision. The focussing of the camera is preferably automatic. Preferably the visual display monitor gives a mirror image of the subject-user.

Advantageously for the subject-user the control means are actuatable by means of a touch screen, and instructions for the subject-user
25 may be visual or audio/visual. Furthermore, the subject-user may select in which language the instructions are to be given, the installation having a multi-lingual capability.

The means for informing the subject-user as to when the selected montage is to be captured may be in the form of a light which is
30 illuminable at a predetermined time prior to the capture. In addition or in the alternative, an audible means may be employed.

The installation may include illumination means for illuminating the subject-user and the means may be provided as a backlit screen and may include a flash light.

The illumination means may be arranged to compensate automatically for any changes in ambient lighting levels. In this respect also the camera lens may be provided with an auto iris to assist in obtaining the correct light levels.

- 5 Conveniently, the subject-user may input a preselected image temporarily into the memory such that it becomes a stored image, a scanner being provided for that purpose.

- Means may be provided to enable the subject-user to add further images as enhancements to the real time or stored images thereby
10 giving effectively a three-plane montage. The further images may be in the form of cosmetic enhancements such as cephalic features, for example scars, or different hair styles. In the alternative, the further images may be messages.

- The control means are conveniently adapted to respond to a specific
15 print command such that the subject-user has control over the time of photographic printing. Preferably the material in which the photographic print is fixed is security coded, for example by means of a bar code, to ensure that printing will only occur when the correct material is fed to the printer.

- 20 For the purpose of ease of maintenance, the computer of the installation is provided with a service menu which can be accessed upon an appropriate command by authorised personnel. The service menu may include a facility whereby the stored images can be replaced by reloading via a diskette.

- 25 The installation of the present invention is thus more user friendly than conventional installations of a similar type since it facilitates automatic composition of the personalised montage and control is simplified with visual or audio/visual aids in the selected language of the subject-user.

CLAIMS

1. A video-photo installation including a video camera for receiving a real-time image of a subject-user, sensing means for sensing the position of the subject-user and for adjusting the position of the subject-user and/ or the camera to obtain a correct sight of the subject-user image, a computer including a memory having a plurality of stored images, control means enabling the subject user to control the installation, a visual display monitor for visually representing a montage of the image of the subject-user and one or more stored images, the control means being adapted for actuation by the subject-user to select one or more of the stored images for display on the monitor and to effect operation of the camera to focus upon the subject user to obtain a real-time image, the control means being further adapted upon command of the subject-user to freeze a particular real-time image, means for instructing the subject-user as to the manner and sequence in which the control means are actuable, means for informing the user as to when the montage is to be captured, means for recording and printing the captured montage, the control means being actuable to effect printing of the captured montage.
2. An installation according to Claim 1 wherein the installation is housed within a booth which incorporates a seat, or other support, for the subject-user, the seat or other support being movable to position the subject-user accurately for the camera.
3. An installation according to Claim 1 or 2 in which the camera is adapted for movement into a position whereat the subject-user comes within its field of vision.
4. An installation according to any one of claims 1 to 3 in which the focussing of the camera is preferably automatic.
5. An installation according to any one of the preceding claims in which the visual display monitor gives a mirror image of the subject-user.

6. An installation according to any one of the preceding claims in which the control means are actuatable by means of a touch screen.
7. An installation according to any one of the preceding claims in which instructions for the subject-user are visual or audio/visual.
- 5 8. An installation according to any one of the preceding claims in which the means for informing the subject-user as to when the selected montage is to be captured is in the form of a light which is illuminable at a predetermined time prior to the capture.
9. An installation according to any one of the preceding claims in
10 which there is provided illumination means for illuminating the subject-user.
10. An installation according to claim 9 in which the illumination means includes a flash light.
11. An installation according to any one the preceding claims in
15 which the illumination means includes a backlit screen.
12. An installation according to any one of the preceding claims 1 to 9 in which the illumination means is arranged to compensate automatically for any changes in ambient lighting levels.
13. An installation according to any one of the preceding claims in
20 which the camera lens is provided with an auto iris to assist in obtaining the correct light levels.
14. An installation according to any one of the preceding claims in which a scanner is provided.
15. An installation according to claim 14 in which the scanner is
25 adapted to scan a preselected image provided by the subject-user for inputting into the installation temporarily for use as a stored image.

16. An installation according to any one of the preceding claims in which means are provided to enable the subject-user to add further images as enhancements to the real time or stored images thereby giving effectively a three-plane montage.

5 17. An installation according to claim 16 in which the further images are in the form of cosmetic enhancements.

18. An installation according to claim 16 in which the further images are in the form of messages.

10 19. An installation according to any one of the preceding claims in which the control means are adapted to respond to a specific print command such that the subject-user has control over the time of photographic printing.

15 20. An installation according to any one of the preceding claims in which the computer of the installation is provided with a service menu which can be accessed upon an appropriate command by authorised personnel.

21. An installation according to claim 20 in which the service menu includes a facility whereby the stored images can be replaced by reloading via a diskette.

20 22. A video-photo installation substantially as hereinbefore described.

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

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Relevant Technical Fields

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Search Examiner
J M McCANN

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18 NOVEMBER 1993

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant following a search in respect of Claims :-
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Categories of documents

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|---|---|
| X: Document indicating lack of novelty or of inventive step. | P: Document published on or after the declared priority date but before the filing date of the present application. |
| Y: Document indicating lack of inventive step if combined with one or more other documents of the same category. | E: Patent document published on or after, but with priority date earlier than, the filing date of the present application. |
| A: Document indicating technological background and/or state of the art. | &: Member of the same patent family; corresponding document. |

Category	Identity of document and relevant passages	Relevant to claim(s)
Y	GB 2242592 (PMI) especially pages 4 to 6	1-10
Y	WO 91/11748 (PHOTOSTAR) see page 13 lines 20 to 26	1-10
Y	US 4891660 (BIONDO) see abstract	7

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).